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CIX. Nesquehoning Valley R. R.

See page 44, above.

STATIONS.	Elevations.	Ocean Level.	
Nesquehoning	801.116		
Hauto	1005.19		
Hometown	1175.64		
Hawk Switch	1221.43		
Pamanend	1287.43		

CXII. Lehigh and Lackawanna R. R.

See page 45, above.

STATIONS.	Elevations.	Ocean Level.	
Bethlehem Junction	239.35		
Shimer's	289.129		
Ritter's	298.67		
Brodhead's	313.077		
Steubens'	333.257		
Clyde	362.387		
Bath	422.687		
Chapmansville	575.927		

Stated Meeting, January 21, 1876.

Present, 15 members.

Vice-President, Mr. Fraley, in the Chair.

A photograph of Prof. Jas. C. Booth was received and ordered to be placed in the Album.

Letters of envoy were received from the R. Academy at Stockholm, and the R. Observatory at Greenwich.

Donations for the Library were received from the R. Academy at Stockholm, R. Academy and Observatory at Turin, Victoria Institute, Nature, Geological Society at Dublin, American Journal of Science, P. & L. Society at Leeds, Antiquarian Society at Albany, Academy of N. S. at Philadelphia, Franklin Institute, Medical Journal, Engineer

Department U. S. A., Congressional Library, Wisconsin Historical Society, and a Committee of the Boston Society of Civil Engineers.

Mr. Chase described a Japanese translation of Dr. Henry Hartshorne's book entitled, "Essentials of the Practice of Medicine."

Mr. Price exhibited a piece of wood, very dry and light, and not at all mineralized, recently obtained from a city well, and desired to place on record the following memorandum:

Two wells for drains have been dug at and near the southern end of the Hotel at the southwest corner of Broad and Walnut streets, the highest part of the old city of two square miles in area. After the surface and brick clay, the digging was through firm blue clay to the depth of thirteen feet from the curb line; then fine gravel; and at the bottom coarse "water gravel," which was penetrated to the depth of 27 feet from the curb, where the digging ceased, without going below that gravel. The lower was the coarsest, with pebbles two or three inches in diameter; and through it were scattered some unrounded stones, with angles more or less sharp, but only a few inches in length, and the largest not over eight inches long. Near the bottom was found the limb of a tree, two inches thick in the broadest diameter.

Mr. Blodget described the clays and gravels underlying the city, and a map of Broad street, from South street to League Island, which he had published to show that they were evenly deposited at about the level of tide.

Mr. Blodget said that, in the borings on League Island which he superintended, the gravel beneath the clay was proved to pass under the water and forms the river bed, affording good holding ground for ships everywhere, the central channel being 33 feet deep, and the inshore soundings 16 feet below low water mark. A little mud is seen at the upper end of the island. The southern end shows a tough clay, which sets or hardens on exposure, and is used for embanking. At Point Breeze, in excavations for the large bank, one foot of quicksand was found 45 feet down, under which lay firm gravel; the series from the surface downward being 1, top loam; 2, sandy clay and blue clay; 3, gravel. Piles 18 feet long driven through blue clay took firm hold in the lower gravel.

Mr Tathem said that at Fifth and Walnut streets there were two gravels, separated by 20 feet of blue clay and mud, a pure slimy blue clay without a particle of gravel.

Morris, Tasker & Co.'s well in Southwark went down 70 feet before striking rock, and continued in the rock to a depth of 250 feet.

Mr. Price said that his present excavations at Twenty-eighth and Oxford streets, show at 15 feet from the surface a black streak 2 inches thick, the whole mass being gravel as far as they have yet gone.

Mr. Blodget recounted the experience of those who laid the foundations of the Masonic Temple, Broad and Filbert, where two gravels were found separated by 3 feet of quicksand, which required two powerful steam pumps 6″ and 8″ working night and day. The top of the quicksand layer was accidentally uncovered at the corner of the lot 40 feet deep, and this obliged the plan for laying the foundation to be entirely changed at an expense of say $30,000.

The great tower of the Public Buildings opposite to the Masonic Temple, has its foundation laid in the upper gravel, and there is a possibility of future disaster from the subjacent quicksand.

Dr. Cresson communicated also the following record and analyses of the boring at the Continental Hotel, at the corner of Chestnut and Ninth streets:

Analysis of Water from Artesian Well at Continental Hotel and Schuylkill River.

Analysis made by..........Charles M. Cresson, M.D., 417 Walnut Street.
Sample received..March 22, 1875.
" amount of (U. S. G. =231 Cubic Inches, =8.332698)....4 gallons.
Analysis made...................................March 23d—April 15th.

Condition of sample..........................Small amount of Sediment.
Reaction..Neutral.

Analysis No. 1442.	Artesian W.	Schuylkill R.
	Grains in 1 U.S.Gallon	Grains in 1 U.S.Gallon
Sediment		
Solid matter upon evaporation to dryness	13.58000	6.99000
" " " " " after ignition		5.06000
Organic Matter (Carbonic Acid, &c.), by loss on ignition		1.93000
Silica ($Si O_3$)	2.11800	0.65000
Alumina ($Al_2 O_3$)	0.42800	0.05100
Oxide of Iron ($Fe_2 O_3$)		0.05900
Lime ($Ca O.$)	1.47448	0.94640
Magnesia ($Mg O.$)	0.46908	0.53280
Carbonic Acid (CO_2)	not det.	not det.
Sulphuric acid free (SO_3)	none	none
" " in combination	0.68750	1.18000
Chlorine free ($Cl.$)	none	none
" in combination	0.65000	0.50000
Potash ($KO.$)	chiefly potash.	chiefly soda.
Soda ($Na O.$)		
Ammonia free (NH_3)	0.00646	0.00850
" albumenoid	0.00442	0.02142
Nitrogen from Nitrates and Nitrites	0.18360	0.17000
Sewage	0.04420	0.21420

Well at Continental passed through,	Thickness of strata.	Total depth.
Sand and Gravel to Rock at	40 feet.	40 feet.
Blue Gneiss	100 "	140 "
Feldspar	1 "	141 "
Light Grey Gneiss	38 "	179 "
Pure Feldspar	27 "	206 "
Pump down to	178 "	384 "

Is a purer and better drinking water than that supplied from the Schuylkill, and equally good for household purposes. In March 1874 and 1875 water became muddy for four hours and then clear again.

Mr. C. E. Hall communicated, through the Secretary, a List of Genera and Species of Fossils determined by him during 1874 and 1875, to be included in his report on the Fossils of Pennsylvania for the Geological Survey.

Mr. Lesley communicated a list of 2,500 station-levels in Pennsylvania, collated from railway and other records, by Mr. Charles Allen, of the Geological Survey.

Mr. Chase communicated certain conclusions deducible from the curves of rainfall in North America.

Mr. Lesley was elected Librarian.

The following Standing Committees were appointed for the ensuing year:

Finance,

Mr. Frederick Fraley,
Mr. Eli K. Price,
Mr. Benjamin V. Marsh.

Publication,

Dr. John L. LeConte,
Dr. Daniel M. Brinton,
Dr. Harrison Allen,
Dr. Charles M. Cresson,
Mr. William M. Tilghman.

Hall,

Gen. Hector Tyndale,
Mr. Edward Hopper,
Mr. Solomon S. Roberts.

Library,

Dr. Benjamin H. Coates,
Mr. Eli K. Price,
Dr. Joseph Carson,
Dr. Charles T. Krauth,
Dr. George H. Horn.

Pending nominations 791, 792 were read.

Pending nomination No. 791 was balloted for.

The reading of the list of surviving members was postponed.

The annual report of the Trustees of the Building Fund was presented and referred.

On motion of Mr. Price, an appropriation of $500 was made for the immediate binding of the unbound Serials in the Library.

On motion of Mr. Blodget, it was

Resolved, That a Committee of this Society be appointed to consider the propriety of attempting a representation of the progress of research in Physical Science in the United States at the coming Centennial, and of inviting the co-operation of other Societies in such representations.

Mr. Blodget, Dr. Barker and Dr. Campbell were appointed the Committee.

On scrutiny of the ballot box by the presiding officer, it was announced that:

Dr. J. Gibbons Hunt was duly elected a member of the Society.

And the meeting was adjourned.